



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,467	04/02/2004	Christopher F. Lyons	H0368	3192
23623	7590	07/07/2006	EXAMINER	
AMIN, TUROCY & CALVIN, LLP 1900 EAST 9TH STREET, NATIONAL CITY CENTER 24TH FLOOR, CLEVELAND, OH 44114			LEWIS, MONICA	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/817,467

Applicant(s)

LYONS, CHRISTOPHER F.

Examiner

Monica Lewis

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed April 10, 2006.

Response to Arguments

2. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lyons et al. (U.S. Patent No. 6,955,939).

In regards to claim 1, Lyons et al. ("Lyons") discloses the following:

- a) a substrate (200) (For Example: See Figure 2);
- b) a polymer dielectric over the substrate (For Example: See Column 4 Lines 5-21);
- c) at least one active device comprising an organic semiconductor material (212) and a passive layer (210) (For Example: See Column 11 Lines 60-62); and
- d) wherein coefficients of thermal expansion of the polymer dielectric and organic material are substantially matched (For Example: See Column 4 Lines 5-21, Column 12 Lines 64-67 and Column 13 Lines 49-57)(Note: Although Lyons does not specifically disclose the limitations listed above, the same material is utilized in Lyons as in Applicant's invention therefore it would inherently have the same characteristics.).

Art Unit: 2822

In regards to claim 2, Lyons discloses the following:

a) the polymer dielectric comprises at least one selected from the group consisting of polyimides, fluorinated polyimides, polysilsequioxanes such as hydrogen polysilsequioxanes, methyl polysilsequioxanes, butyl polysilsequioxanes, and phenyl polysilsequioxanes, benzocyclobutenes (BCB), fluorinated benzocyclobutene, polyphenylene, polysilazanes, polyphenylquinoxaline, copolymers of 2,2-bistrifluoromethyl-4,5-difluoro-1,3-dioxole, perfluoroalkoxy resin, fluorinated ethylene propylene, fluoromethacrylate, poly(arylene ether), fluorinated poly(arylene ether), fluorinated parylenes, poly(p-xylylenes), fluorinated poly(p-xylylenes), parylene F, parylene N, parylene C, parylene D, amorphous polytetrafluoroethylene, polyquinoline, polyphenylquinoxalines, and polymeric photoresist materials (For Example: See Column 4 Lines 5-21).

In regards to claim 3, Lyons discloses the following:

a) the polymer dielectric comprises a self patternable material (For Example: See Column 4 Lines 5 and 6).

In regards to claim 4, Lyons discloses the following:

a) the polymer dielectric has a glass transition temperature or a melting point of about 125° C. or higher and about 425° C. or less)(Note: Although Lyons does not specifically disclose the limitations listed above, the same material is utilized in Lyons as in Applicant's invention therefore it would inherently have the same characteristics.).

In regards to claim 5, Lyons discloses the following:

a) the polymer dielectric has a dielectric constant below about 3 (For Example: See Column 4 Lines 5-21))(Note: Although Lyons does not specifically disclose the limitations listed above, the same material is utilized in Lyons as in Applicant's invention therefore it would inherently have the same characteristics.).

In regards to claim 6, Lyons discloses the following:

a) a conductive polymer (For Example: See Column 11 Lines 65 and 66).

In regards to claim 7, Lyons discloses the following:

a) the organic semiconductor material comprises at least one selected from the group consisting of polyacetylene; polydiphenylacetylene; poly(t-butyl)diphenylacetylene; poly(trifluoromethyl)diphenylacetylene; polybis(trifluoromethyl)acetylene; polybis(tbutyldiphenyl)acetylene; poly(trimethylsilyl) diphenylacetylene; poly(carbazole)diphenylacetylene; polydiacetylene; polyphenylacetylene; polypyridineacetylene; polymethoxyphenylacetylene; polymethylphenylacetylene; poly(t-butyl)phenylacetylene;

Art Unit: 2822

polynitro-phenylacetylene; poly(trifluoromethyl) phenylacetylene; poly(trimethylsilyl)phenylacetylene; polydipyrromethane; polyindoquinone; polydihydroxyindole; polytrihydroxyindole; furanepolydihydroxyindole; polyindoquinone-2-carboxyl; polyindoquinone; polybenzobisthiazole; poly(p-phenylene sulfide); polyaniline; polythiophene; polypyrrole; polysilane; polystyrene; polyfuran; polyindole; polyazulene; polyphenylene; polypyridine; polybipyridine; polyphthalocyanine; polysexithiophene; poly(siliconoxohemiporphyrizine); poly(germaniumoxohemiporphyrizine); poly(ethylenedioxythiophene); polymetalloocene complexes; and polypyridine metal complexes (For Example: See Column 12 Lines 64-67 and Column 13 Lines 49-57).

In regards to claim 8, Lyons discloses the following:

a) the passive layer comprises at least one selected from the group consisting of copper sulfide, copper rich copper sulfide, copper oxide, copper selenide, copper telluride, manganese oxide, titanium dioxide, indium oxide, silver sulfide, gold sulfide, iron oxide, cobalt arsenide, and nickel arsenide (For Example: See Column 11 Lines 58-65).

In regards to claim 9, Lyons discloses the following:

a) one active device comprises a first and a second electrode (202 and 214), a passive layer adjacent the first electrode, and the organic semiconductor material adjacent the second electrode (For Example: See Figure 6).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2822

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML

June 27, 2006

A handwritten signature in black ink, consisting of stylized, overlapping loops and a long horizontal stroke extending to the right.